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# Titanium Ingot, Mill Products, and Castings

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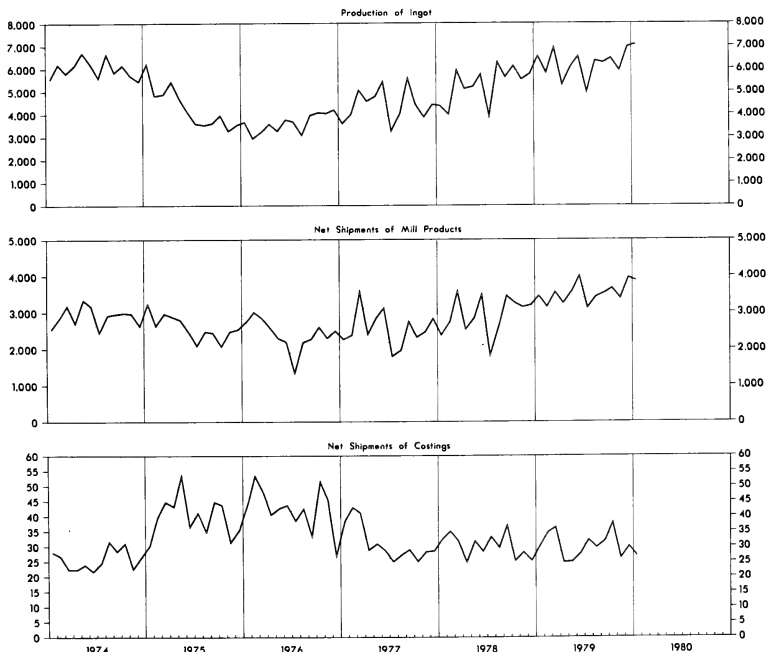
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The statistics in this publication are based on a survey of manufacturers and represent total U.S. shipments of titanium ingot, mill products, and castings. Estimates are included for

companies whose reports were not received in time for tabulation. A more complete description of this survey appears on page 4.

**THIS REPORT INCLUDES DATA COMPARING DOMESTIC OUTPUT, EXPORTS, AND IMPORTS**

TITANIUM INGOT AND MILL PRODUCTS BY MONTH: 1974 TO 1980  
(In Thousands of Pounds)



Address inquiries concerning these figures to the U.S. Department of Commerce, Bureau of Industrial Economics, Washington, D.C. 20230, or to the Bureau of the Census, Industry Division, Washington, D.C. 20233, or call Stephen M. Pope, (301) 763-2529.

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Table 1. TITANIUM INGOT, MILL PRODUCTS, AND CASTINGS: 1978 TO 1980

Month and year	Ingot			Mill products net shipments <sup>1</sup>	Castings shipments
	Production	Consumption	Ending stocks		
1980					
January.....	7,086	7,242	4,128	3,882	26.9
1979					
December.....	6,973	6,335	4,442	3,966	30.2
November.....	5,958	6,144	4,107	3,605	26.5
October.....	6,477	6,870	4,485	3,678	38.3
September.....	6,279	7,040	4,602	3,538	32.0
August.....	6,359	5,452	4,444	3,436	29.8
July.....	5,932	4,688	4,334	3,149	32.3
June.....	6,579	5,856	4,401	4,029	27.8
May.....	6,095	5,449	4,367	3,573	25.1
April.....	5,343	5,377	4,197	3,266	24.9
March.....	6,983	6,349	4,368	3,571	36.5
February.....	5,858	5,447	3,947	3,170	34.9
January.....	6,582	6,767	4,039	3,464	30.3
1978					
December.....	5,784	5,532	4,310	3,207	25.5
November.....	5,546	5,717	3,886	3,160	28.3
October.....	6,141	6,740	4,656	3,279	25.5
September.....	5,660	5,305	5,122	3,474	37.4
August.....	6,336	4,956	5,452	2,603	29.9
July.....	4,906	3,903	3,685	1,866	33.4
June.....	5,792	5,360	4,186	3,534	28.6
May.....	5,224	4,985	4,111	2,867	32.0
April.....	5,138	5,272	4,246	2,560	25.2
March.....	5,985	5,443	4,079	3,623	31.9
February.....	4,024	4,585	3,480	2,743	35.2
January.....	4,388	4,530	3,973	2,401	26.5

<sup>1</sup>Revised by 5 percent or more from previously published figures.<sup>2</sup>See table 2 for more detailed data.

Table 2. NET SHIPMENTS OF TITANIUM MILL PRODUCTS

(Thousands of pounds)

Product	January 1980	December 1979	November 1979	January 1979
Total.....	3,882	3,966	3,405	3,444
Sheet and strip.....	1,010	1,081	913	693
Plate.....	1,673	1,644	1,429	1,604
Forging and extrusion billet.....	659	606	445	642
Rod and bar.....	186	219	176	140
Fastener stock and wire.....	354	418	442	385
Extrusions (other than tubing).....				
Pipe and tubing.....				
Other.....				

Table 3. NET SHIPMENTS, EXPORTS, IMPORTS, AND APPARENT CONSUMPTION OF TITANIUM MILL PRODUCTS: 1977 to 1980

(Quantity in thousands of pounds; value in thousands of dollars)

Month and year	Manufacturers' net shipments <sup>1</sup> (quantity)	Exports of domestic merchandise <sup>2</sup>			Percent exports to manufacturers' net shipments (quantity)	Imports for consumption <sup>3</sup>		Calculated import duty (value)	Apparent consumption <sup>4</sup> (quantity)	Percent imports to apparent consumption (quantity)
		Quantity	Value at port	Estimated producers' value <sup>5</sup>		Quantity	Value <sup>6</sup>			
1980										
January.....	3,882	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
1979										
December.....	3,966	416	3,773	3,596	10	149	861	154	3,699	4
November.....	3,405	414	3,308	3,153	12	255	1,538	258	3,246	8
October.....	3,676	518	4,201	4,004	14	147	754	133	3,305	4
September.....	3,538	135	1,598	1,523	4	111	687	116	3,514	3
August.....	3,436	165	1,829	1,743	5	153	701	106	3,424	4
July.....	3,149	145	2,092	1,994	5	80	799	127	3,084	3
June.....	4,059	222	2,249	2,162	5	102	673	119	3,909	3
May.....	3,573	281	2,493	2,366	8	210	1,087	185	3,502	6
April.....	3,266	65	873	831	2	229	1,068	186	3,430	7
March.....	3,571	155	1,851	1,763	4	234	1,187	208	3,650	6
February.....	3,170	66	817	778	2	90	375	62	3,194	3
January.....	3,464	49	605	576	1	124	656	102	3,559	4
1978										
December.....	3,207	94	817	778	3	125	526	94	3,238	4
November.....	3,160	109	1,089	1,038	3	83	351	62	3,134	3
October.....	3,279	62	586	558	2	237	804	137	3,434	7
September.....	3,474	82	799	761	2	161	658	117	3,553	5
August.....	2,603	78	685	653	3	154	766	118	2,679	6
July.....	1,866	116	987	940	6	256	1,063	188	2,006	13
June.....	3,534	152	1,072	1,021	4	207	867	153	3,589	6
May.....	2,847	217	1,786	1,702	8	214	962	164	2,844	8
April.....	2,560	74	630	600	3	191	817	144	2,677	7
March.....	3,623	242	1,943	1,851	7	64	207	38	3,445	2
February.....	2,763	73	661	630	3	282	1,053	176	2,952	10
January.....	2,401	80	713	679	3	276	1,145	200	2,597	11
1978, total.....	35,129	1,379	11,768	11,213	4	2,250	9,187	1,581	36,000	6
1977, total.....	30,932	1,368	11,821	11,263	4	708	2,958	683	30,272	2

(NA) Not available.

<sup>1</sup>See table 4 for comparison of Standard Industrial Classification (SIC) codes, Export (Schedule B) codes, and Import (TSUSA) codes.<sup>2</sup>Source: Bureau of the Census Report PT-410, U.S. Exports, Commodity by Country.<sup>3</sup>These values were derived by use of adjustment factors to exclude freight insurance, and other charges incurred in moving goods to the port of export. This adjustment is made to convert the values to an approximation of the producers' value of exported goods. Current adjustment factors are based on data for 1976 which are published in "Origin of Exports of Manufacturing Establishments," 776(AS)-8, appendix A. The adjustment factor for this report is .953.<sup>4</sup>Source: Bureau of the Census Report IM 145-X, U.S. Imports for Consumption and General Imports.<sup>5</sup>Beginning with 1978, the dollar value represents the c.i.f. (cost, insurance, and freight) value at the first port of entry in the United States plus U.S. import duties.<sup>6</sup>Apparent consumption is derived by subtracting exports from the total of net shipments plus imports.

Table 4. COMPARISON OF STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES, EXPORT (SCHEDULE B) CODES, AND IMPORT (TSUSA) CODES

1980 SIC product code	SIC code description	1980 Export code (Schedule B)	Export code description	1980 Import code (TSUSA)	Import code description
33562 74	Forging and extrusion billet.....	630,6570	Wrought titanium metal, including alloys (excludes sponge, ingots billets, blooms, sheet bar, slabs, waste, and scrap)	620,2000	Wrought titanium metal, including alloys (excludes waste and scrap and unwrought metal)
33562 79	Other (sheet, plate, tubing, bar, etc.).....				

## DESCRIPTION OF SURVEY

*Scope of Survey*—This survey covers firms engaged in manufacturing titanium ingot and mill products, including castings.

*Sampling Description*—The statistics in this publication were collected on the Bureau of Industrial Economics Form ITA-991, **Titanium Metal**. The mailing panel for this survey includes all known titanium ingot, mill product, and castings producers.

*Survey Error*—Figures for the current month include estimates for respondents whose reports were not received in time for tabulation. Such missing figures are "imputed" from month-to-month movements shown by reporting firms and are generally limited to a maximum of 10 percent for any one item. Individual items with imputation rates greater than 10 percent are footnoted.

The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual monthly movements for nonrespondents may or may not closely agree with the imputed movements. The probable range of difference between the actual and imputed figures is unknown. The degree of uncertainty regarding the accuracy of the data, however, increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

*Revision to Previous Period Data*—Statistics for previous months may be revised due to receipt of corrected data from respondents, including late reports for which imputations were previously made as described above, and other corrections. Figures which have been revised by more than 5 percent from previously published figures are indicated by footnotes.

*Seasonal Adjustment*—The data are not adjusted for seasonal variation or number of working days.

## EXPLANATION OF TERMS

*Net Shipments*—Derived by subtracting the sum of producers' receipts of each mill shape from the industry's gross shipments of that shape.

*Gross Shipments*—Include the quantities of mill shapes consumed in rolling mills in the production of fabricated products such as forgings, etc. Also includes the quantities of mill shapes shipped between producers.

## COMPARISON OF EXPORT, IMPORT, AND DOMESTIC OUTPUT DATA

The Standard Industrial Classification (SIC) system used for domestic output and the statistical export and import commodity classifications were developed independently and are based on somewhat differing systems of classification. This results in considerable difficulty in comparing the three types of data for many commodity areas. The domestic output classification is based on type of industry; whereas, the export and

import classification system is more materials oriented. Aside from the differences in the basic commodity classifications, there are additional problems involving import data, since there are a substantial number of imported commodities which are not produced in the United States or which are produced only in very small quantities and which, therefore, have no comparable domestic output classification. The relationships shown in this report should be considered only as approximations, since, in addition to those mentioned above, there are also the following problems affecting the comparability of the three sets of data:

a. *Valuation*—There are different methods of valuation for the three types of data.

*Domestic Output*—Valued at the point of production. It includes the net sales price, f.o.b. plant, after discounts and allowances, exclusive of freight charges and excise taxes.

*Exports*—Valued at the point of exportation. It includes the selling price, or cost if not sold, and inland freight, insurance, and other charges to the export point.

Estimated producers' values of exports have also been developed. These values more closely approximate the values reported for domestic output because they exclude freight, insurance, and other charges applied from the producing plant to the export point.

*Imports*—Valued at the first port of entry in the United States. It includes c.i.f. (cost, insurance, and freight), duty, and other charges to the import point.

b. *Duplication in Quantity and Value of Output*—Because producers' shipments of some commodities may be used as materials for incorporation into other commodities, combinations of data for such commodities may contain a certain amount of duplication. Thus, percentages of exports to output or imports to apparent consumption (output plus imports minus exports) at four-digit or broader levels may be understated. Where duplication is known to be substantial, the output data are appropriately noted in the table.

c. *Low-Valued Export and Import Transactions*—Commodity information is not shown for individual imports valued under \$251. For exports, commodity information is not reported for shipments individually valued under \$251 effective October 1969 and for shipments valued under \$100 prior to October 1969. This is believed to have only negligible effect on the statistics for most commodities.

d. *Manufacturers' Shipments, Not Specified by Kind*—The value of manufacturers' shipments at the four-digit industry level often includes a small amount which is not distributed among the individual five-digit product classes. Export and import percentages at the more detailed levels might, therefore, be slightly overstated.

e. *Time Lag Between Output and Exports*—There will be a lag between the time a commodity is produced or shipped by the producer and the time it is actually exported, especially

when intermediaries (wholesalers, exporters, etc.) are involved. Ordinarily, this type of discrepancy is insignificant in annual figures.

f. *"Direct" vs "Total" Commodity Export and Imports*—Export and import data do not include materials which are incorporated into other more finished products and exported or imported in finished form. Thus, by showing only direct exports and imports, the relation of exports to output and imports to apparent consumption for intermediate products is considerably understated.

g. *Used Commodities*—With a few exceptions, used or rebuilt commodities are classified in the same import or export codes as is new merchandise. Percentages are thus overstated to the extent that used or rebuilt products are significant in trade.

## RELATED REPORTS

An annual Current Industrial Report is published in this series. The annual report summarizes monthly figures and incorporates all known revisions in the series for both current and previous year, thus providing a single reference copy to replace the monthly publications. This annual summary provides additional information on the history of this survey.

The Bureau of the Census also publishes reports on related products as follows:

Series	Frequency	Title
<i>Current Industrial Reports</i>		
M3-1	Monthly	Manufacturers' Shipments, Inventories, and Orders
M33-2	Monthly	Aluminum Ingot and Mill Products

Series	Frequency	Title
MA-33G	Annually	Magnesium Mill Products
MA-33B	Annually	Steel Mill Products
M33A	Monthly	Iron and Steel Castings
M33E	Monthly	Nonferrous Castings

## Foreign Trade Reports

FT-410	Monthly	U.S. Exports—Schedule B—Commodity by Country
IM 145-X	Monthly	U.S. Imports for Consumption and General Imports

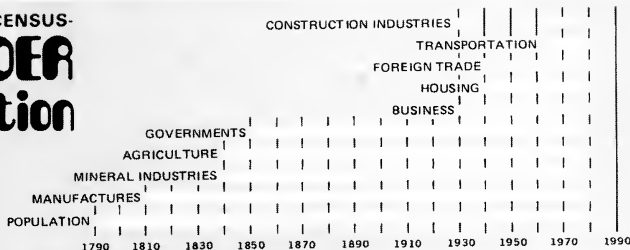
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Subject Area	Contact	Phone Number
Current Industrial Report ITA-991 formerly DIB-991	Stephen M. Pope	(301) 763-2529
Foreign Trade publications	Juanita Noone	(301) 763-5140
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